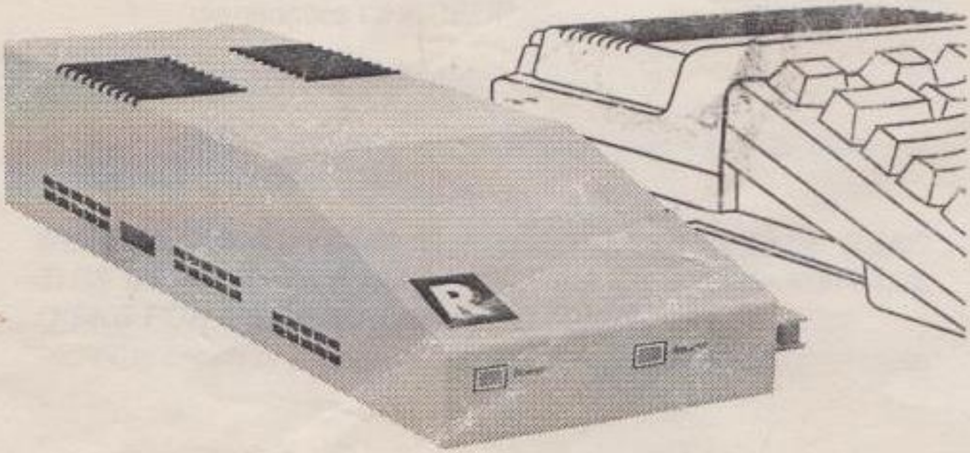
REFERENCE AMIGA HARD DRIVE MANUAL



Version 3.0

INTRODUCTION AND CONTENTS

Thank you for purchasing the high performance REFERENCE SCSI Hard Disk and autoconfiguring FAST RAM for Amiga 500 and Amiga 500 Plus computers. REFERENCE is attractively styled and attaches to the side of Amiga 500 series computers, vastly accelerating the performance of the Amiga. All software needed for operation is included. The following * items are included in your Reference 40/100 pack:

* Reference 40/100 SCSI hard disk, controller and memory expansion unit with a formatted SCSI hard drive mechanism, fitted and tested. Up to four 1MB SIMM modules, fitted and tested as applicable.
* A regulated mains power supply and mains cable
* Two system floppy disks, HDSETUP and memory diagnostics CHECKUP
* MR-Backup software
* This Reference quick installer / operator manual.

BEFORE USING YOUR NEW HARD DISK PLEASE READ THIS MANUAL AND MAKE COPIES OF THE SOFTWARE DISKS FOR USE AND KEEP THE ORIGINALS SAFELY .

(The copies of the software disks should retain the original titles)

Section 1 REFERENCE 40/100 SCSI Hard Drive and FAST Memory expansion

1.1 Reference SCSI Hard Drive features
1.2 Reference FAST AutoConfig Memory features

Section 2 REFERENCE Hardware Installation

2.1 Switch Link Connector and LED data
2.2 Connecting up Reference
2.3 Turning the system on and off

Section 3 REFERENCE Software Installation

3.1 Status of unit as shipped
3.2 WorkBench 1.2/1.3 installation for Kidkstart 1.2 Amigas
3.3 WorkBench 1.3 installation
3.4 WorkBench 2.0 installation
3.5 Autobooting and Booting from floppy and use of mouse.
3.6 Mouse key action during boot.

Section 4 REFERENCE SETUP programme

4.1 HDSetUp

Section 5 REFERENCE SCSI Hard Disk

5.1 Formatting
5.2 Fragmentation
5.3 Backing up data and why to do it
5.4 Care of Hard Drives
5.5 Compatible devices
5.6 Connecting and using external SCSI Drives

Section 6 REFERENCE FAST AutoConfig Memory

6.1 Upgrading memory
6.2 Disassembly for upgrading memory
6.3 Fitting internal expansion memory
6.4 Reassembly after upgrading memory
6.5 CHECKUP memory checker

Section 7 REFERENCE

7.1 Connecting third party devices to expansion port
7.2 Games compatibility
7.3 Installation of application programmes
7.4 Further Information

Section 8 PURCHASE WARRANTY INFORMATION

1.1 REFERENCE SCSI Hard drive features :

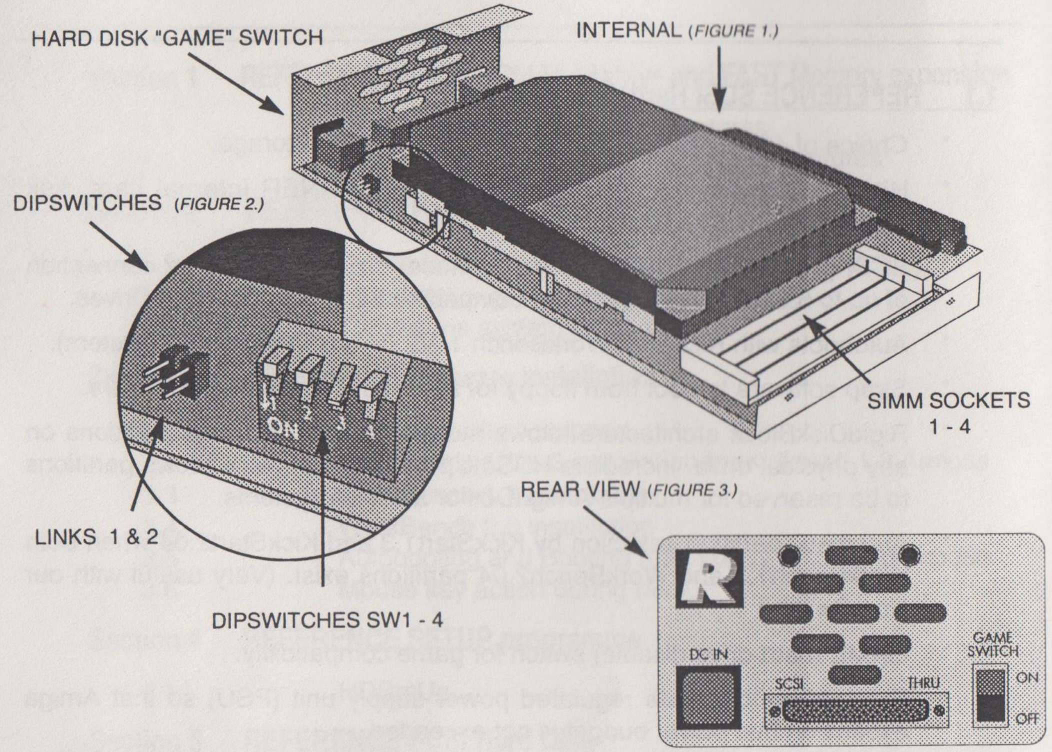
- Choice of 40 or 100 MB of internal SCSI hard disk storage.
- High performance autoparking NEC/IBM/CONNER internal hard disk mechanism.
- SCSI (Small Computer Standard Interface) daisy chain port for connection of up to 6 external Reference or compatible SCSI Add-On Hard Drives.
- Autoboots with KickStart/WorkBench 1.3/2.04 (Old and FastFileSystem).
- Strap software to boot from floppy for KickStart/WorkBench 1.2 users.
- RigidDiskBlock architecture allows multiple logical drives as partitions on any physical drive. Incredible HDSetUp partition software allows partitions to be reserved for multiple AmigaDos or alien file systems.
- Automatic partition selection by KickStart1.3 and KickStart2.04 when both WorkBench1.3 and WorkBench2.04 partitions exist. (Very useful with our RomSwitch.)
- GAME (hard drive disable) switch for game compatibility.
- External switch mode regulated power supply unit (PSU) so that Amiga expansion bus power budget is not exceeded.
- SCSI hard disk ACCESS LED.
- Internal cooling fan for reliability.
- MRBackup software.

1.2 REFERENCE FAST AUTOCONFIG Memory features :

- FAST RAM upgradeable to 4 MB using common 1MB SIMM memory modules. (or upto 1MB with 256KB SIMM modules.)
- GAME (RAM disable) dip switches for game compatibility.
- 512KB to 4MB "FAST" autoconfiguring memory frees up trapdoor memory for use as "CHIP" memory.
- CheckUp Memory diagnostics software allows users to check memory integrity.
- POWER LED doubles as memory ACCESS LED by blinking with memory accesses.
- Compatible with REFERENCE Amiga RAM expansion.

Strict adherence to Amiga "AutoConfig" convention allows other "AutoConfig" compatible devices to be attached to expansion bus.

Styled to match the Amiga, Reference was designed and built in the UK.



2.1 Definition of switches

Hard Disk "GAME" switch *(Figure 3)* - Black rocker switch on the back of Reference. Allows:

Hard Disk copy protected games to run while still using expansion memory.

GAME switch ON = Disable Hard Disk power and interface only
GAME switch OFF = Enable Hard Disk power and interface (NORMAL position)

DIP switches SW1-4 accessible through the left hand side of the Reference case
DIP switches ON = DOWN.

You MUST REBOOT the Amiga after adjusting SW1-3.

SW1 is the Reference expansion memory Enable

SW1 on = Expansion memory on. NORMAL position if RAM fitted.
SW1 off = Expansion memory off. Also acts as GAME position.

SW2 is the RAM "GAME,TEST" switch. Requires SW1 on, if memory fitted.

Allows RAM copy protected games to run while still using the Hard Disk.

SW2 on = GAME or Ram TEST on. GAME position.
SW2 off = Expansion memory as "FAST" memory. NORMAL position.

SW3 is AutoBoot on/off. Enables Amiga to boot from Reference Hard Disk.
SW3 on = Autoboot on. For use with KickStart1.3 or KickStart2.04.
SW3 off = Autoboot off. For use with KickStart1.2.

SW4 Drive ready time switch Sets the time allowed for hard drives to become ready when the system is turned on.

SW4 on = Fast Cold Boot ON. *(See section 5.6 if using external SCSI drives)*
SW4 off = Fast Cold Boot OFF. *(For use with all makes of SCSI hard drives)*

SW1-4 were factory set for NORMAL use as applicable.

Definition of Links *(Figure 2.)*

Links 1 and 2 are situated between the Hard disk GAME switch and DIP switches, they are only accessible when the cover is removed to fit SIMM memory modules.

Link1: Configures type of SIMMs fitted
OFF = 256kB SIMMs ON = 1MB SIMMs
Link2: (Configures how many SIMMs fitted)
OFF = 2 SIMMs ON = 4 SIMMs

Connectors *(Figure 3)*

25 way "SCSI THRU" port is a female "D"type connector situated on the back of Reference, used to connect further SCSI data storage devices.

"DC IN" multipole power supply connector situated on the back of Reference, for connection to Reference 40/100 power supply unit ONLY.

SIMM sockets 1-4 are situated inside Reference at the front of the unit, and are only accessible when the cover is removed to fit SIMM memory modules. *(Figure 1)*

PO+ and HD+ led indicator connectors are situated inside Reference at the very front, and used to connect to the front panel LED's.

Front panel LED's

POWER.	Indicates power on/off, this LED also blinks with RAM activity. **PLEASE NOTE This LED is dual-purpose, blinking is normal indication of memory use. *NOT an indication that the power supply is failing!***
ACCESS.	Indicates SCSI hard disk writing or reading activity. This LED also lights when any external SCSI device is accessed.

2.2 CONNECTING UP REFERENCE 40/100 SCSI Hard Disk and FAST memory

If you are unsuccessful while implementing instructions:

1) Please read the instructions again.
2) Check that power is on, switches in the correct state, all connections made.
3) Correct any errors and try again.

If you are still unsuccessful, switch off and contact technical support.

Assuming that you have backup copies of the distribution disks ready for use.

To connect your REFERENCE 40/100 SCSI hard disk and FAST memory:

1. Make sure your Amiga A500/A500+ is turned off and disconnect the power.
2. On your Reference set the switches:

   Hard Disk "GAME" rocker switch OFF (Enabling the hard disk).
   If expansion memory is present in your Reference, put SW1 (Enable memory) ON (down) and SW2 (GAME,TEST / RUN fast memory) OFF (up).
   If no expansion memory is present in your Reference, SW1 must be OFF (down).
   If you intend to use AmigaDos 1.3 or above put SW3 (Enable autoboot) ON (down). If you intend to use AmigaDos 1.2 then SW3 must be OFF (up)

3. Locate the expansion port on the left hand side of your Amiga computer. Use a coin or large flat-bladed screwdriver to remove the cover of the port, insert at the top centre of the cover and gently prise the cover off.

4. Place your Reference and Amiga side by side on a flat surface. Line up the back of your Reference 40/100 with the back of your Amiga and carefully plug the Reference in to the Amiga. Do not force it in; make sure the Reference and Amiga are aligned correctly before pushing the two units together. The Reference 40/100 should then fit snugly on the side of the Amiga.

5. Plug the Reference external power supply into your Reference 40/100 and ensure a good connection. Connect the Reference external supply to the mains, but do not turn on yet.

6. Reconnect your Amiga power supply, but do not turn on yet.

2.3 Turning the system on and off

The power budget available from the Amiga expansion bus is insufficient to power a hard disk and it's electronics, so an external power supply has been provided for the purpose.

Connection of other power supply modules must NOT be attempted, and will cause malfunction or fatal amnesia of both hard disk and RAM, if incorrect voltage or reversed polarity is applied.

Assuming that the above switches are set correctly:

Turning on the Reference 40/100

The REFERENCE 40/100 power supply must always be turned on at the same time or before the Amiga power supply is turned on, to avoid crashing the system.

If the Amiga and Reference power supplies share the same power strip or common mains adaptor, the two power supplies can be turned on together.

When you turn on the power to the two power supplies, you should be able to faintly hear the hard disk spin up and the fan will be blowing.

Turning off the Reference 40/100

Before turning the system off you should allow 30 seconds to allow the Amiga to finish all tasks.

The REFERENCE 40/100 power supply should not be turned off before the Amiga supply, the two power supplies can be turned off together.

3.1 Status of unit as shipped

You can not boot your Amiga from your Reference 40/100 until WorkBench has been copied to your Reference 40/100.

Reference 40 MB is factory formatted as a single partition and is ready for use, by installing WorkBench to it. Reference 100 MB is factory formatted as two partitions and is also ready for use, by installing WorkBench.
At this point you must decide if the partition configuration of the unit that you have bought is suitable for your use. If it is suitable or you do not want to get involved with the complications of partitions then proceed to the relevant section on WorkBench installation, either section 3.2 or 3.3 or 3.4
If you intend to use both KickStart/WorkBench 1.3 and 2.0, with a ROM switcher or on both an A500 and an A500+, or you prefer to have more partitions for some other reason, then your drive can be partitioned into further logical drives. It will be necessary to run the HDSetUp programme. If there is an insufficient number of partitions on the drive for your purpose, then go to HDSetUp section 4.1 before installing WorkBench.

The following information is provided for users who may enhance or modify the system for their use, and may be disregarded by other users, until needed.

The internal SCSI drive was set as number 0 at the factory. The SCSI controller number is 7, this means that external SCSI drives 1-6 are available for expansion via the 25 way SCSI connector.

The system area of the disk as supplied contains:

1) The RigidDiskBlock.
2) A copy of the FastFileSystem.
3) A copy of the Evesham driver.

The data area on any partition as supplied will contain:

1) Disk icon, for example "Reference".
2) Trashcan directory and icon.

The boot priorities of the two partitions on the 100 MB unit have been set so that, if AmigaDos 1.3 is installed on the first partition (DH0:) and AmigaDos 2.0 is installed on the second (DH1:), the Amiga will automatically boot up the correct AmigaDos with whatever Kickstart (1.3/2.0) is currently in use. Very useful with ROM switchers, and compatible with use on A500 and A500+ machines.

This can be implemented on Reference 40, but the drive must be split into two partitions, the boot priorities set to 0 and 1 reformatted, and both AmigaDos 1.3 and 2.0 installed. The partitioning and setting of boot priority have to be implemented by using the HDSetUp programme. ANY EXISTING DATA WILL BE LOST!
If necessary now go to the section on using HDSetUp programme, section 4.1 before you install WorkBench.

3.2 WorkBench 1.2 /1.3 installation for Kickstart 1.2 Amigas

Turn the computer system on as described above.
You must first modify a copy of your WorkBench 1.2/1.3 system disk The Startup-Sequence must include "BindDrivers" and then "Node4" A sample Startup-Sequence has been supplied in the "s" directory of the HDSetUp disk, called V1_2 Startup-Sequence-HD. This can be copied directly (if renamed Startup-Sequence) on to your system disk "s" directory or used as a model to edit your own Startup-Sequence.

The Startup-Sequence initialises the hard disk for use and then assigns the Hard Disk directories to be used in preference to the floppy disk directories.

From the HDSetUp disk also copy the following files to your modified 1.2/1.3 system disk that you will have to use from now on to boot up your hard disk.

From/To "Expansion" directory: Evesham.device and Evesham.device.info
From/To "c" directory: Node4

"BindDrivers" must also be in the "c" directory of the modified system disk.
Reboot up your Amiga with your modified WorkBench 1.2/1.3 system disk. The WorkBench screen will now display: RamDisk icon, WorkBench icon and Reference Hard Disk icon(s).

If the Hard Disk icon(s) display DH0:NDOS or DH0:??? the Hard Disk has not already been formatted or you have used HDSetUp to modify partitions. Any partitions displaying DH0:NDOS, DH0:??? or partitions that you have changed the size of must now be formatted. See the section on how to format.
You must now copy the contents of your WorkBench disk to your Hard Disk.

Open your boot floppy by clicking on its icon, then open AmigaDos Shell.
Enter the line:

```
    COPY DF0: ALL DH0:  or   COPY DF0: ALL DH1:
```

This will copy your WorkBench to your Hard Disk. The ACCESS LED will flash while copying.

3.3 Workbench 1.3 installation

Turn the computer system on as described above. Boot up your Amiga with your WorkBench 1.3 system disk. The WorkBench screen will now display: RamDisk icon, WorkBench icon and Reference Hard Disk icon(s).

If the Hard Disk icon(s) display DH0:NDOS or DH0:??? the Hard Disk has not already been formatted or you have used HDSetUp to modify partitions. Any partitions displaying DH0:NDOS, DH0:??? or partitions that you have changed the size of must now be formatted. See the section 5.1 on how to format.

You must now copy the contents of your WorkBench disk to your hard disk.
If you have only one partition, you will copy to DH0: If you have more than one partition you must copy to the partition which you intend to boot the Hard Disk from (normally DH0:).
If you have more than one partition and you intend to have a partition for 2.0 then you must copy to the partition that has a boot priority of 0 (this would be DH0: for the 100MB version as supplied).

Open your boot floppy by clicking on its icon, then open AmigaDos Shell.
Enter the relevant line:

```
COPY DF0: ALL DH0:          or          COPY DF0: ALL DH1:
```

This will copy your WorkBench to the relevant partition.
The ACCESS LED will flash while copying.

Your Reference drive will be ready for use when you have finished installing the necessary WorkBench configuration. When you have finished you can remove your WorkBench floppy and reboot your computer, which will now boot on its own from Reference, at great speed!

3.4 WorkBench 2.0 installation

Turn the computer system on as described above.

Boot up your Amiga with your WorkBench 2.0 system disk. The WorkBench screen will display: RAMDisk icon, WorkBench icon and Reference Hard Disk icon(s) now.

If the Hard Disk icon(s) display DH0:NDOS or DH0:??? the Hard Disk has not already been formatted or you have used HDSetUp to modify partitions.
Any partitions displaying DH0:NDOS, DH0:??? or partitions that you have changed the size of must now be formatted. See the section 5.1 on how to format.

You must now copy the contents of your WorkBench disk to your hard disk.
If you have only one partition, you will copy to DH0:

If you have more than one partition you must copy to the partition which you intend to boot the hard disk from with WorkBench 2.0.

If you have more than one partition and you intend to have a partition for 1.3 then you must copy to the partition that has a boot priority of 1 (this would be DH1: for the 100MB version as supplied).

If you have the 100MB version as supplied, the boot priority of the DH0: partition is 0 and the boot priority of DH1: is 1. If you specifically want to install WorkBench 2.0 on DH0: you will have to reset the boot priority of DH1: back to 0 by using the HDSetUp programme. If you do not wish to use the HDSetUp programme, then install WorkBench 2.0 on DH1: since the boot priorities will direct KickStart 2.0 to this partition automatically on the 100MB version as supplied

Open your boot floppy by clicking on its icon, then open AmigaDos Shell.

Enter the relevant line:

```
COPY DF0: ALL DH0:          or          COPY DF0: ALL DH1:
```

This will copy your WorkBench to the relevant partition.

The ACCESS LED will flash while copying.

Your Reference drive will be ready for use when you have finished installing the necessary WorkBench configuration. When you have finished you can remove your WorkBench floppy and reboot your computer, which will now boot on its own from Reference, at great speed!

3.5 Autobooting and booting from floppy

Autobooting from the Hard Disk is not possible with KickStart/WorkBench 1.2, It will always be necessary to boot from a modified system floppy disk, with some additional files as described above.

For KickStart/WorkBench 1.3, 2.0 and later Autobooting from the hard disk is normal. A bootable floppy disk inserted in the internal floppy drive will boot instead.

AutoBooting from both WorkBench 1.3 and 2.0 partitions is a special feature of Reference multiple partition hard drives. But the boot priorities have to be set to 0 for the 1.3 partition and 1 for the 2.0 partition.

3.6 Mouse Key action during Boot

While the Amiga system is booting up from Reference, holding down either or both mouse buttons produces different effects.

Clicking on the left mouse button 4 or more times will decrease the time taken to boot.

Holding down the right mouse button will lengthen the boot period, this will allow a drive that takes a long time to spin up, to be mounted.

If you are using KickStart 2.0 then holding down both mouse buttons will bring up the Amiga Boot Menu. This allows you to reselect the boot partition and other Advanced Amiga options.

4.1 HDSetUp

The reference drive comes ready formatted and initialised, and if WorkBench is copied onto it (see chapter 3), the drive is ready for use. However Reference can be set up simply as above, or into multiple partition configurations for more adventurous users by using HDSetUp.

The program HDSetup requires 1MByte of memory to run and is provided for use to:-

1) Alter the way the partitions are set up or adjust the boot priority.
2) Set up a drive that has either been obtained from elsewhere, or used on a different computer.
3) Set up a drive that has been low level formatted.

There is on-line help in the HDSetUp programme.

If you get stuck when you run HDSetUp, just exit the programme without writing anything to the Hard Disk, and see if the information contained in the file HDSetUp_Help answers your questions.

HDSetUp_Help contains a guide to help you through the programme, and also a glossary to help with the complicated language of AmigaDos Hard Disks. It may help to dump the document to printer.

AmigaDos 1.2 users have to modify the Startup-Sequence on the copy of HDSetUp that is going to be used to run HDSetUp from. A replacement Startup-Sequence has been supplied on the HDSetUp disk in the "s" directory.

The substitute Startup-Sequence is called "Setup-Startup-v1.2".

5.1 Formatting

LOW LEVEL FORMAT

Low level format is used to form the initial data storage areas on a hard disk, formed in sectors tracks and cylinders.

Drives supplied as new are Low Level Formatted by the drive manufacturer. At the Reference factory we put a partition structure on all drives, and then DOS format the partition(s), ready for WorkBench installation.

A drive may develop bad sectors in use, or eventually display different read write behaviour over a temperature change. Low level formatting the unit may cure the problem

Backup any data needed before running Low Level Format since all data, all partition structure, and all partitions will be total destroyed. It takes several minutes to do the formatting operation.

After running Low Level Format you will have to use HDsetUp to replaces the partition structure and then DOS format the new Partition(s) before WorkBench can be reinstalled.

DOS FORMAT

If you have been running HDSetUp programme and you have been adjusting the number or size of partitions on your Hard Disk, you will need to format the partitions for the filing system used.

If you wish to empty partitions of data, you may wish to format rather than delete all of the files.

In either case normal Amiga format commands can be used for AmigaDos partitions, which, incidentally must be named DH(n): or the partition will not be recognised by Amiga DOS.

The briefest way to format any partition is to use the "quick" option. To do this you need to enter the SHELL or CLI and enter a format command stating the "quick option and "FFS" if you are using the fast file system, although Amiga Dos 2.0 does detect and implement FastFileSystem automatically.

For example FORMAT DRIVE DH0: NAME REFERENCE QUICK FFS

You can omit the quick option if you really want to. You can use the WorkBench 1.3 Initialise or WorkBench 2.0 format from the menu, but it does take a very long time to do the format.

5.2 Fragmentation

Fragmentation is an effect caused by successively deleting and then rewriting files to any AmigaDos disk. When a file is deleted a space of corresponding length is left on the disk. The next file written to the disk is unlikely to be the same length, if it is shorter than the space available from the last file deleted, a gap is left on the disk. Eventually the spaces available on the disk/partition may become so fragmented that although everything is working, some files seem to take a long time to load or save. If this occurs you can recover the speed of file transfer, by backing up the contents of the disk/partition to floppy or another empty partition, deleting the contents of the disk/partition and copying the files back from the backup disks so that the files become contiguous entities once more.

5.3 Why to Back Up your data

Imagine the result of an electronic failure in the Hard Disk mechanism. It does not happen often, but having copies of software on disk stops any failure becoming a nightmare.

There are numerous ways in which you could lose all or part of your data, from accidental damage (the hard drive not having time to AutoPark its data heads in between falling off the coffee table and hitting the floor!) to disk defects that occur over time or from knocks that the drive is likely to encounter or power failures or Unrecoverable Gurus..........

Do BackUp your data, MR BackUp has been included in your pack, do use it or something like it, or just keep copies of everything on floppy disk.

5.4 Care of Hard Drives

Hard Disks are very susceptible to damage from being knocked or dropped. The Hard Disk mechanism is very fragile and will not stand being knocked. If you mishandle the unit the minimum effect will be loss of data, bad mishandling will mean needing to replace the mechanism.

Dropping the hard drive from one inch above a table top would SEVERELY DAMAGE the mechanism.

Do not block the Hard Drive ventilation slots.

Do not touch any exposed electrical connections on the Amiga or Reference.

Do use the original packing for transportation through the post.

5.5 Compatible SCSI devices

Although SCSI is an established standard for interfacing devices, there are incompatible devices available, different manufacturers of mechanism implement the standard to different levels. So to overcome compatibility problems either get confirmation from us that the device that you intend to connect is known to be compatible, or obtain a Reference expansion drive which will of course be known to be compatible.

5.6 Connecting and using external SCSI drives

The pin out of the 25 pin connector on the back of Reference is identical to the Commodore standard used in the A590. Simply connect the 25 pin SCSI cable into the 25 pin D-type connector on the back of Reference. Ensure that all SCSI attached devices have different SCSI numbers. The SCSI drive inside Reference was set as 0 at the factory, the controller inside Reference is number 7, so numbers 1-6 are available for use by external SCSI devices.

If you are using Fast Cold Boot, it is a good idea to use the next available SCSI address. For example if you are connecting the first external drive then use the SCSI address1, the SCSI address 2 for the next, and so on.

Please note that some makes of SCSI hard drives will not boot with Fast Cold Boot ON. For these drive types set Fast Cold Boot OFF.

The REFERENCE Add-On Hard Drive is set as SCSI 1. This drive can also be divided into partitions, by use of the HDSetUp programme provided.

Just as for Reference on its own the external SCSI drive and Reference must be powered up before or simultaneously with the Amiga.

Do not mix up power supplies and extension drive units. Always ensure that the power supply that comes with Reference 40/100 is only used with Reference 40/100, and the power supply that comes with the extension drive should only power the extension drive. Exchanging power supplies must not be attempted, even if the plugs and sockets are identical, the connections used by different vendors equipment will differ. Overvoltage or reverse polarity applied to any of these units will permanently damage them.

WARNING: *Overloading can cause overheating*

6.1 Upgrading memory.

Memory upgrade kits are available for your Reference Hard Disk / RAM unit from Evesham Micros.

A total of 512k, 1, 2, or 4MegaBytes of FAST memory can be fitted to Reference.

Four types of SIMM memory modules are compatible with Reference:

These are:- 256 k bit x 8
256 k bit x 9 (IBM compatible type)
1 M bit x 8
1 M bit x 9 (IBM compatible type)

You can fit either 2 or 4 modules of the same addressable size (256kB or 1MB)

2 x 256k bit modules	= 512 kBytes	set	Link 1 OFF	&	Link 2 Off
4 x 256k bit modules	= 1 MegaByte	set	Link 1 OFF	&	Link 2 ON
2 x 1M bit modules	= 2 MegaBytes	set	Link 1 ON	&	Link 2 OFF
4 x 1M bit modules	= 4 MegaBytes	set	Link 1 ON	&	Link 2 ON

There is no advantage to be gained by fitting any mixture of 256 k bit and 1 M bit modules together, since the Amiga will not configure the mixture.

SIMM RAM modules should have an Access time (often referred to as speed) of equal to or less than 120nS (nano seconds).

6.2 Disassembling REFERENCE 40/100

There are NO user serviceable parts inside the Reference, so fitting memory is the ONLY legitimate reason for the user to open the case up.

Disconnect in the following order :

Your Amiga power supply from the mains supply.
Your REFERENCE 40/100 power supply from the mains supply
Your REFERENCE 40/100 power supply from the REFERENCE 40/100.
Your REFERENCE 40/100 from your Amiga.

WARNING The electronics inside REFERENCE will be damaged by static electricity.
DO NOT open up the Reference case if there is a Static electricity hazard. Friction against man made fibres like Nylon will generate static. Take care, unsuitable environments include encountering soft furnishings, carpets, man made fibres and clothing, computer monitors and TV's.

Using a suitable flat blade screwdriver undo 2 screws, on the top of the Reference 40/100 top cover at the back. Note that the top cover opens from the back and how the top cover engages on 2 pins at the front of the base metalwork. Remove the top cover, note how the flying leads from the Access and Power Leds are connected to a polarised connector and unplug them.

6.3 Fitting internal expansion memory

If you are only fitting 2 RAM modules, fit one module in the socket nearest to the hard disk numbered SIMM 1 on the printed circuit board. Fit the second in the socket furthest from the hard disk numbered SIMM 2.

If SIMM 1 and SIMM 2 have already been fitted, you can fit RAM modules in the sockets marked SIMM 3 and SIMM 4 (If they are not already fitted of course).

When you fit the modules, the side of the module with the chips on it will always face towards the hard disk. (The modules will not push into the sockets when oriented incorrectly.) The modules are polarised so that they can not be fitted incorrectly.

Now set Links 1 and 2 to the appropriate state for the amount of memory fitted.

6.4 Reassembling REFERENCE 40/100

Reconnect the ACCESS LED flying leads onto the polarised connector. Power/RAM access to side marked "PO", Hard Disk access led to side marked "HD". Re-engage the pins at the front of the top cover with the locating holes in the base metalwork, while taking care not to trap the LED flying leads in the metalwork. lower the top cover to its correct position on the base metalwork. Resecure the top cover to the base with two screws, at the back of the top cover.

6.5 CHECK-UP memory checker

CheckUp will confirm normal operation of memory, report faults and also display AutoConfig information about the attached devices. The programme is Menu driven, and self explanatory to use.

To overcome the possibility of writing over important Amiga data, the memory diagnostics have been written so that the test can only be made with the Game, Test / Run dipswitch SW2 down (GAME,TEST) position.

The status of dipswitches does not affect the AutoConfig device list facility.

To run the CheckUp memory checking facility, expansion memory must be fitted, and both dipswitches SW1 and SW2 MUST be ON (down).

If you have to set either switch, to run the memory checker, reboot the machine because the Amiga must read the switches and reconfigure.

(In the Game, Test position, it is unlikely that the Power/RAM Access LED will blink, since there will be only light access to Reference memory)

The CheckUp programme is in the tools drawer of the CheckUp disk.

7.1 Connecting third party devices to expansion port

Only devices that fully meet the Amiga standards for "Autoconfiguration" and that do not interfere with the expansion bus can be connected in between your Amiga 500/500+ and Reference 40/100. If a device is connected between your Amiga and Reference and you have difficulties that do not manifest when Reference only is connected then you must approach the device manufacturer for advice, since Reference adheres strictly to the Autoconfig protocols it is most unlikely to be at fault.

Your Reference can be populated with upto 4 MBytes of "FAST" memory. If more memory than this is required, we recommend the Reference 8Mbyte external memory populated to 4 Mbytes (since the Amiga has only a total of 8 MByte space configurable for "FAST" AutoConfig memory). The Reference 8 MByte has a pass through port and can be connected in between Reference 40/100 and Amiga. It also adheres strictly to the Amiga "Autoconfig" protocol so it is totally compatible.

NEVER *disconnect or reconnect the Reference whilst the Amiga is switched on it can cause potential damage to your equipment and invalidate your guarantee(s).*

To connect other devices between Reference and Amiga ALWAYS turn everything off first and obey the information in the Sections 2.2 and 2.3.

7.2 Games compatibility

If a game will not run, it is most likely to be due to some form of copy protection employed by the game.

Some games will not run on the Amiga if extra RAM is present.

To run these games, try setting the Game, Test / Run dipswitch SW2 in the down position (Game, Test position). Reboot the Amiga for the switch to take effect.

You could also try setting the memory disable dipswitch SW1 off (up), again it will be necessary to reboot the Amiga for the switch to take effect.

The game may need a Hard Disk installation facility or special instructions to allow installation on a Hard Disk.

The game may be copy protected with a special disk format, to inhibit copying.

Some games will not run on the Amiga if a Hard Disk is present. To run these games try setting the Hard Disk "GAME" rocker switch to the ON position and reboot your Amiga from floppy, since the Hard Disk is now inactive.

Another way of copy protecting games is to only allow the game to run in a precise amount of memory. For example the amount available when no internal or external memory or external floppy or Hard Disks are connected to the Amiga. It follows that they all have to be disabled for the game to run.

A ROM Switch and additional ROM is the solution to games that are incompatible with your KickStart ROM.

7.3 Installation of application programmes.

If the application programme has an automatic Hard Disk install facility, do use it. If an application does not then work, it will be due to a bad install facility. Some possible reasons may be included below, but the problem should be dealt with by the software supplier.

For other installations that will not run:

1. Are all of the required files copied to the Hard Disk?
2. Do you need to use AmigaDos "ASSIGN"
3. Have you confused partitions with directories?
4. Is the installation intended to be run from the Hard Disk?
5. Has the startup- sequence been overwritten during a copy?

7.4 Further Help

Installation problems may be solved by reading through this manual again.
HD SetUp has help screens explaining different functions, and there is also a separate help file called HDSetUp-help.

CheckUp diagnostics also has helpscreens.

Refer to WorkBench and AmigaDos manuals for help with WorkBench and AmigaDos.

You can also telephone or write to Technical Support.

8 PURCHASE WARRANTY INFORMATION

We are confident that you will have every success with the use of Reference 40/100. Reference carries a one year guarantee, valid from the date of purchase printed on the receipt / invoice supplied. Upon receipt if anything appears to be missing, or has been damaged in transit, please contact our Customer Services Department immediately on 0386 - 765500.

If you are unable to install Reference 40/100 or you believe that something does not work correctly, please read through this instruction manual again. Many users cause unnecessary problems for themselves by not following the instructions. If you are still having difficulty, please contact our Technical Support on 0386 40303.

If your Reference is found to be faulty within the initial 28 day period from date of purchase, we can under some circumstances arrange for a replacement to be supplied. Should it be necessary to return Reference to us within the 28 day period, we will refund compensation fee postal expenses: outside of that 28 day period, it will be necessary to return Reference at your own expense.

For your own benefit, we recommend that you use Compensation fee Parcel Post, an insured postal delivery service provided by all Post Offices, for returning equipment. If you are in any doubt contact our Customer Services on 0386 765500.

When returning Reference, please state:
Your Customer Name,
Your Name, Address and Postcode,
Your daytime phone number,
The date of purchase,
Full description of problem.

And return Reference *in it's complete original packaging* to:

Evesham Micros.
RETURNS DEPT
Unit 9, St Richards Road,
Evesham,
Worcestershire,
WR11 6TD

N.B Goods returned for warranty repair that are found to have been mistreated, damaged, dismantled, modified or tampered with in any way will be treated as chargeable items.